

## **REMARKS**

Please reconsider the present application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering the present application.

### **I. Disposition of Claims**

Claims 1-13 are currently pending in the present application. By way of this reply, claims 1, 3, 5, 8, 10, and 12 have been amended.

### **II. Claim Amendments**

Claims 1 and 8 have been amended to recite that the composition material of the first gallium nitride compound semiconductor is formed on less than a total area of a first surface of the first gallium nitride compound semiconductor. No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 2A of the present application.

Claims 3 and 10 have been amended to recite that the base layer is constructed by forming a layer on less than a total area of a surface of the base layer for varying the diffusion lengths of composition materials of a gallium nitride compound semiconductor. No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 2A of the present application.

Claims 5 and 12 have been amended to recite that the base layer has a lattice mismatch layer formed on less than a total area of a surface of the base layer. No new matter has been added by way of these amendments as support for these amendments

may be found, for example, in Figure 2A of the present application.

### **III. Rejection(s) Under 35 U.S.C § 102**

Claims 1-3, 5, 6, 7-10, 12, and 13 of the present application were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0178634 A1 in the name of Koide (hereinafter “Koide”). For the reasons set forth below, this rejection is respectfully traversed.

The present invention is generally directed to gallium nitride compound semiconductors. With reference to the exemplary embodiment of the present shown in Figures 2A and 2B of the present application, a method for manufacturing a gallium nitride compound semiconductor in accordance with the present invention involves, at least in part, (i) forming a first gallium nitride compound semiconductor **12** on a substrate **10**, where the first gallium nitride compound semiconductor **12** has a first surface, (ii) forming on less than a total area of the first surface a composition material **15** of the first gallium nitride compound semiconductor, and (iii) forming a second gallium nitride compound semiconductor **18** on the first gallium nitride compound semiconductor **12** on which the composition material **15** is formed.

Amended independent claims 1, 3, 5, 8, 10, and 12 require, in part, that a layer or material be formed on less than a total area of a surface of the base layer or first gallium nitride compound semiconductor layer. For example, in Figure 1A of the present application, the composition material **14** (e.g., the gallium droplets) is formed on portions, or only part, of the first gallium nitride compound semiconductor (or base layer) **12**.

Koide, in contrast to the present invention, fails to at least disclose the limitations of the claimed invention discussed above. In Koide, as shown in Figure 2 of Koide, the purported composition material **22** is formed over an entire area of the purported first gallium nitride compound semiconductor **21**. This is true even prior to etching the purported first gallium nitride compound semiconductor **21** and the purported composition material **22** to form the striped or grid patterns disclosed in Koide. Further, because the purported composition material **22** of Koide is formed on an entire area of a surface of the purported first gallium nitride compound semiconductor **22** (as opposed to on less than a total area of the surface as required by the claimed invention) prior to formation of the purported second gallium nitride compound semiconductor **3**, the structure of Koide may fail to render the beneficial features of the present invention. Accordingly, Koide fails to disclose, either expressly or inherently, the formation of a composition material layer or a lattice mismatch layer on less than a total area of a surface of a gallium nitride compound semiconductor or base layer as required by amended independent claims 1, 3, 5, 8, 10, and 12 of the present application.

In view of the above, Koide fails to show or suggest the present invention as recited in amended independent claims 1, 3, 5, 8, 10, and 12 of the present application. Thus, amended independent claims 1, 3, 5, 8, 10, and 12 of the present application are patentable over Koide. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

#### **IV. Rejection(s) Under 35 U.S.C § 103**

Claims 4 and 11 of the present application were rejected under 35 U.S.C. § 103(a)

as being unpatentable over Koide in view of the reference entitled "A New Method of Reducing Dislocation Density in GaN Layer Grown on Sapphire Substrate by MOVPE" authored by Sakai et al. (hereinafter "Sakai").

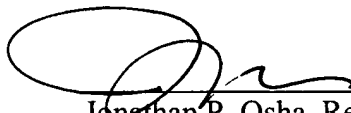
Sakai fails to disclose those limitations of amended independent claims 3 and 10 not disclosed or taught by Koide. Accordingly, Koide and Sakai, whether considered separately or in combination, fail to show or suggest the present invention as recited in amended independent claims 3 and 10 of the present application. Thus, amended independent claims 3 and 10 of the present application are patentable over Koide and Sakai. Dependent claims 4 and 11 are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**V. Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 08228.021001).

Respectfully submitted,

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